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The goal of this study is to determine military environmental factors associated with sexual victimization (harassment, sexual touching, and rape) of service women, and to determine consequent vocational impairment, health status impairment and psychological outcomes (such as Post-Traumatic Stress Disorder). Such information could lead to the development of specific prevention strategies and thereby directly improve service women's safety, health, and military effectiveness. Our pilot data indicated that military environmental factors are associated with sexual victimization and resultant psychological distress.

Research Questions:
1. What military environmental factors are assoicated with sexual victimization of service women?
2. How is the psychological functioning and health status of women veterans affected by sexual victimization?
3. How does sexual victimization impair self reported military job performance, job satisfaction, and service attrition or longevity of affected service women? OVER

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4. How is the military response to victimization reports associated with subsequent psychological and health status outcomes of affected women veterans?

A historical cohort study will be used. Veterans from the Vietnam era to recent discharge will be randomly selected from national VAMC registries. Identified veterans will be assessed by telephone interview. Computer-assisted telephone interviewing (CATI) will be used as a method of recording responses.

FOREWORD

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Sexual Victimization And The Military Environment: Contributing Factors, Vocational, Psychological And Medical Sequelae

(5). INTRODUCTION

Nature of the problem. Violence in the workplace, including sexual assault, is clearly an occupational hazard for women. Lifetime rates of rape for American women may be as high as 13%, and 22% of American women report some form of sexual assault during their life (National Victim Center, 1992). Despite research indicating sexual victimization is not a random event, and that some occupations increase women's risk of victimization, factors associated with the occurrence of workplace sexual violence have not been well studied. A Pentagon survey of 20,000 active Army personnel found in 1990 alone the rate of sexual assault in the Army was 129 rape cases per 100,000 population. This occurrence compared unfavorably to 1990 FBI national statistics of 81 rape cases per 100,000 civilians (Roche, 1993). Public Law 102-585, Women's Health Care Act of 1992 Women are entering the military in dramatically increasing numbers and assuming traditionally male work assignments. In the military theater of South-east Asia, women comprised less than 2% of the armed forces with 90% occupying administrative positions. In the Persian Gulf War, women made up 11% of the armed forces, and less than half were employed administratively (Silberman, 1993). Unfortunately few studies specific to service women are available.

The Department of Defense (DOD) performed one of the largest (12,500 active personnel) scientific surveys of sexual harassment (Martindale, 1988). Female personnel (64%) were almost four times as likely as male personnel (17%) to experience some form of sexual harassment. Five per cent of female service women had experienced actual or attempted rape. The proportion of women reporting sexual harassment was highest when the commanding officer (C.O.) encouraged sexual harassment than when the C.O.s were indifferent or neutral; and lowest when the C.O. discouraged sexual harassment.

Subsequently a Navy-wide survey of sexual harassment was performed in 1989. Researchers discovered that 68% of their service women reported that they had been sexually harassed during the 1-year survey period while on duty, on base, or off duty aboard ship, compared to 5% of service men. Seven percent of service women reported attempted or actual rape or assault (Culbertson, et al, 1989).

A 1987 -1991 pentagon survey of sexual harassment among 20,000 active Army personnel found that 64% of women reported they had been sexually harassed during their time in the military, fifteen percent had been touched or cornered, and sexual assault or attempted sexual assault reportedly occurred in 3% of women. The Pentagon (1992) surveyed readjustment counseling services at Vietnam Veterans Outreach Centers and found 26% of women presented with stress related to sexual trauma incurred on active duty (Silberman, 1993).

Most recently, a report on sexual assault in Desert Storm Veterans studied 142 women veterans who responded to a self report survey of sexual harassment (Wolf, et al., 1992). Verbal sexual harassment was reported by 63% (n=90) of respondents, physical touching by 31% (n=44), and attempted or completed rape by 8% (n=11). This study also reported that the effects of harassment and combat exposure on mental health outcome appear to be additive and not interactive.

Purpose. The purpose of this study is to further examine the association between the military environment and sexual victimization and to determine vocational impairment resulting from consequent health status impairment and psychological outcomes (such as post-traumatic stress disorder). Such information is necessary to develop and implement appropriate prevention strategies that will directly improve the safety, health, and military effectiveness of service women.

Research Questions:

1. What military environmental factors are associated with sexual victimization of service women ?
2. How is psychological functioning and health status of women veterans affected by sexual victimization?
3. How does sexual victimization impair self reported military job performance, job satisfaction, and service attrition or longevity of affected service women?
4. How is the military response to victimization reports associated with subsequent psychological functioning and health status outcomes of affected women veterans?

Background of previous work. In the pilot study preceding this grant, women veterans' self-reported occurrence and severity of in-military sexual victimization, environmental factors associated with this victimization, and current psychological distress were assessed. Following approval by our internal review board, The Women's Military Environment Scale, and The Symptom-Check-List 90-R, were mailed with self-addressed, stamped return envelopes to 2,000 female veterans identified through our catchment registry. Surveys were mailed June 29, 1994 and data reported here represents results obtained by a single mailing. The response rate of returned questionnaires was 41%. Two hundred and eighty-eight subjects completed questionnaires. Five hundred inventories were returned due to relocation or address error, 30 subjects were reported as deceased, and 19 refused participation (most frequently due to advanced age). Data were double entered and analyzed using SPSS (Statistical Package for the Social Sciences, Chicago, Illinois). Statistical tests included descriptive summary statistics, Chi-square tests for categorical data, multiple regression analysis, and analysis of variance. The level of significance (alpha) was defined as $p < .05$.

Occurrence of Sexual Victimization

In the sample of 288 women veterans, 15% (n=42) reported attempted or completed rape, 27% (n=78) sexual touching, 17% (n=50) genital fondling, 42% (n=120) sexual harassment, and 16% (n=46) physical assault. We are aware that response bias may potentially have inflated victimization rates in our sample (although this did not occur in pre-Vietnam era veterans). Even if none of non-respondents had experienced any types of sexual victimization, our results would show that at least the following percentages of our sample experienced the following: attempted or completed rape, 3%; sexual touching, 5%; genital fondling, 4%; and sexual harassment, 8%.

Predictors of Sexual Victimization

Pre-Military Sexual Abuse and In Military Rape: In considering factors in the military environment that may contribute to the risk of sexual victimization it is necessary to consider if pre-military sexual victimization is a contributing factor. Era of service was included as we found it to be significantly associated with sexual victimization, as we will discuss later. Our data indicated era of service, childhood sexual abuse, and rape prior to the military accounted for 14% of the variability in reported rape in the military (See Table 1). Notably, era of service accounted for a greater proportion of the variance than childhood sexual abuse and rape prior to military service ($R^2 = .0812$ vs. $R^2 = .0570$). This finding indicates that factors other than the preconditions of childhood sexual abuse or pre-military rape are needed to explain the occurrence of sexual victimization in the military.

Table 1: Prediction of rape by era of service, childhood sexual abuse, pre-military rape (n = 42)

VARIABLE	STEP ENTRY	R^2	ΔR^2	P
1. Era of Service	1	.0812	---	.0000
2. Childhood sexual abuse	1 + 2	.0948	.0136	.0000
3. Rape prior to military	1 + 2 + 3	.1382	.0434	.0000

Military Environmental Factors and In-Military Rape: Military environmental factors appear to be much stronger contributors to the risk of sexual victimization. Controlling for era of service, military environmental factors accounted for a greater proportion of the variability in reported rape during military service than did pre-military rape or childhood sexual abuse ($R^2 = .1850$ versus $R^2 = .0570$) (See Tables 1 and 2). Using multiple regression analysis, the combination of era of service, sexual harassment on duty, ranking service member demand for sex role stereotypic extra-duty jobs, unwanted sexual advancements in sleeping quarters, and greater duty ratio of male soldiers accounted for 27% of the variance associated with rape in the military.

Table 2: Prediction of rape by military environmental factors

VARIABLE	STEP ENTRY	R^2	ΔR^2	P
1. Era of Service	1	.0868	-	.0000
2. On duty sexual harassment	1 + 2	.1835	.0967	.0000
3a. Stereotypic expectations b Sexual advance in quarters c. Gender ratios	1 + 2 + 3a + 3b + 3c	.2718	.0883	.0000

2. Sexual harassment on duty = unwanted sexual advances, sexual remarks, pressure for dates (MES #17A). 3a. Stereotypic expectations = having ranking officer ask woman to perform sex role stereotypic jobs in addition to mode of service (MES #39). 3b. Sexual advances in quarters = experiencing unwanted sexual advancements, sexual remarks, pressure for dates in sleeping quarters (MES #22A). 3c. Gender ratios = on-duty (workplace) situations in which respondent felt unsafe because of being surrounded by male soldiers (MES # 13A).

Military Environment and Sexual Touching: We also investigated the role of military environmental factors contributing to sexual touching in the military among the same cohort. Using multiple logistic regression analysis, the combination of era of service, pornography at the duty station, and sexual harassment on duty account for 37% of the variance associated with sexual touching (Table 3). Notably, the military environmental factors of pornography at duty station and sexual harassment on duty are nearly as important as era served in explaining reported sexual touching in military (R^2 =.1762 versus R^2 =.1950). These results support the previously noted association between environmental factors and sexual victimization in the military.

Table 3: Prediction of sexual touching by military environmental factors

VARIABLE	STEP ENTERED	R^2	ΔR^2	P
1. Service Era	1	.1915		.0000
2a. Workplace pornography b. On-duty sexual harassment	1 + 2a + 2b	.3677	.1762	.0000

2a. Workplace pornography = sexually demeaning comments, behaviors, or pornography at duty station (MES item #16A). 2b. On duty sexual harassment = unwanted sexual advances, sexual remarks, pressure for dates (MES #17A)

Characteristics of Rape Occurrences

We analyzed variables associated with rape, the most severe form of sexual victimization. Notably, 42% of the 42 women reporting attempted or completed rape had suffered rape or attempted rape on two or more occasions. Importantly, 17% of attempted or completed rapes occurred on duty and 67% on base. These results specifically challenge the assumption of safety of the military environment (Table 4). Rape profile proportions do not total to 100% since women reporting more than one episode of rape cited more than one characteristic of the different settings.

Characteristics of Perpetrators

We also evaluated potential factors associated with the perpetrators of sexual victimization in the military. The most notable factor attributable to rape perpetrators was ranking service member status. Since some women reported serial and gang rape, proportions of perpetrator profiles do not total to 100%.

Table 4: Characteristics of Attempted or Completed Rape

VARIABLES	%	N
On Base	67%	28
Off Base	45%	19
On Duty	17%	7
Off Duty	52%	22
More Than One Occasion	42%	18
Gang raped	10%	4
Victim Drug/Alcohol Use	26%	11

Table 5: Characteristics of Rape Perpetrators

VARIABLES	%	N
Ranking Officer	17%	7
Non Commissioned Officer	64%	27
Spouse/Significant other	10%	4
Date	31%	13
Female	2%	1
Using Drugs/Alcohol	31%	13

Psychological Distress and Sexual Victimization

Psychological Distress in Raped Veterans as Compared to Peers: The psychological sequelae of women veterans were examined using The Symptom Check List-90-R (SCL-90-R) as an assessment tool. Corresponding scores and distress experienced range from 1 to 4 with distress levels defined as 1=little, 2=moderate, 3=a bit more than moderate, and 4=severe distress. Women veterans who reported attempted or completed rape demonstrated significantly greater levels of psychological distress than reported by non-victimized women veterans (Figure 1). The most frequent areas of distress included: depression, interpersonal sensitivity (inferiority feelings), obsessive-compulsiveness, anxiety, post-traumatic stress disorder, and overall positive symptom endorsement (indicating global psychological distress).

Type of Sexual Victimization and Psychological Distress: Psychological distress levels were compared by type of sexual victimization (Figure 2). Women veterans reporting sexual harassment and those reporting sexual touching/genital fondling demonstrated similar levels of psychological distress (mild to moderate). Women who had experienced attempted or completed rape had significantly higher levels of distress when compared to those who suffered less severe sexual victimization (moderate).

Figure 1

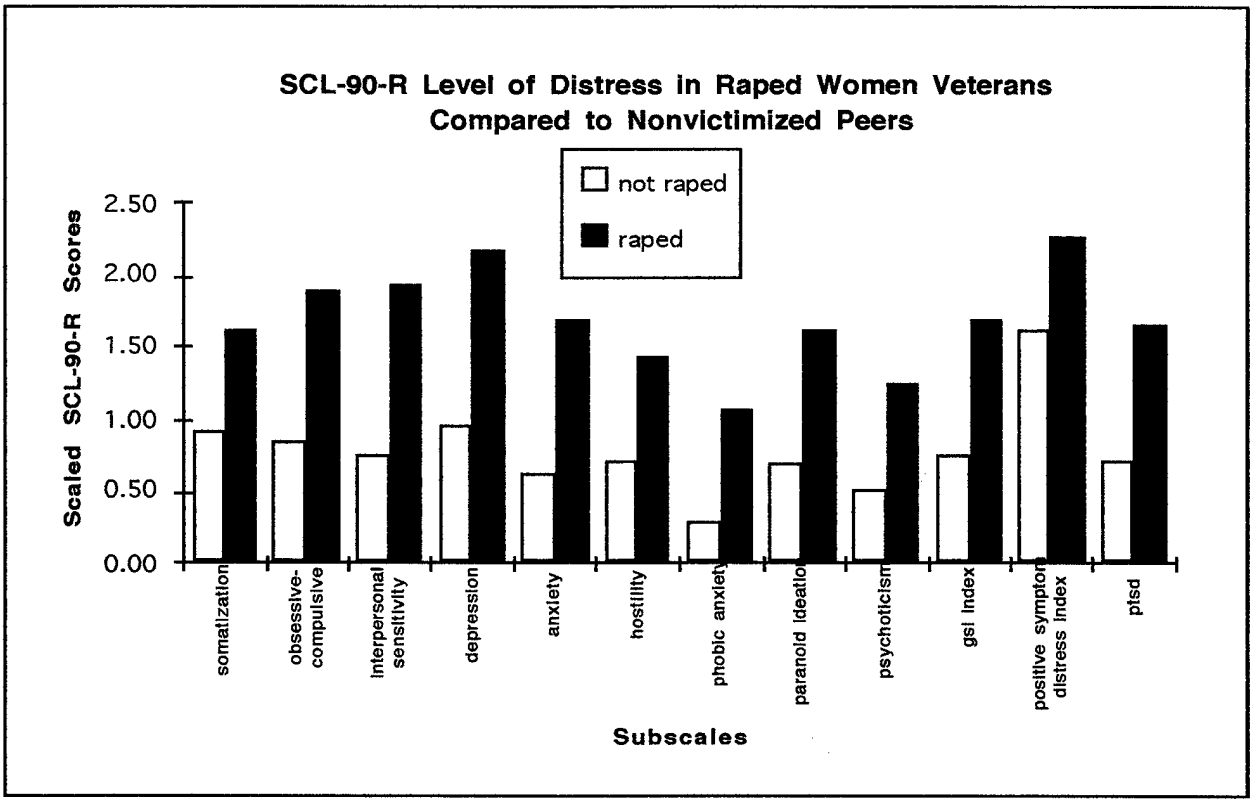
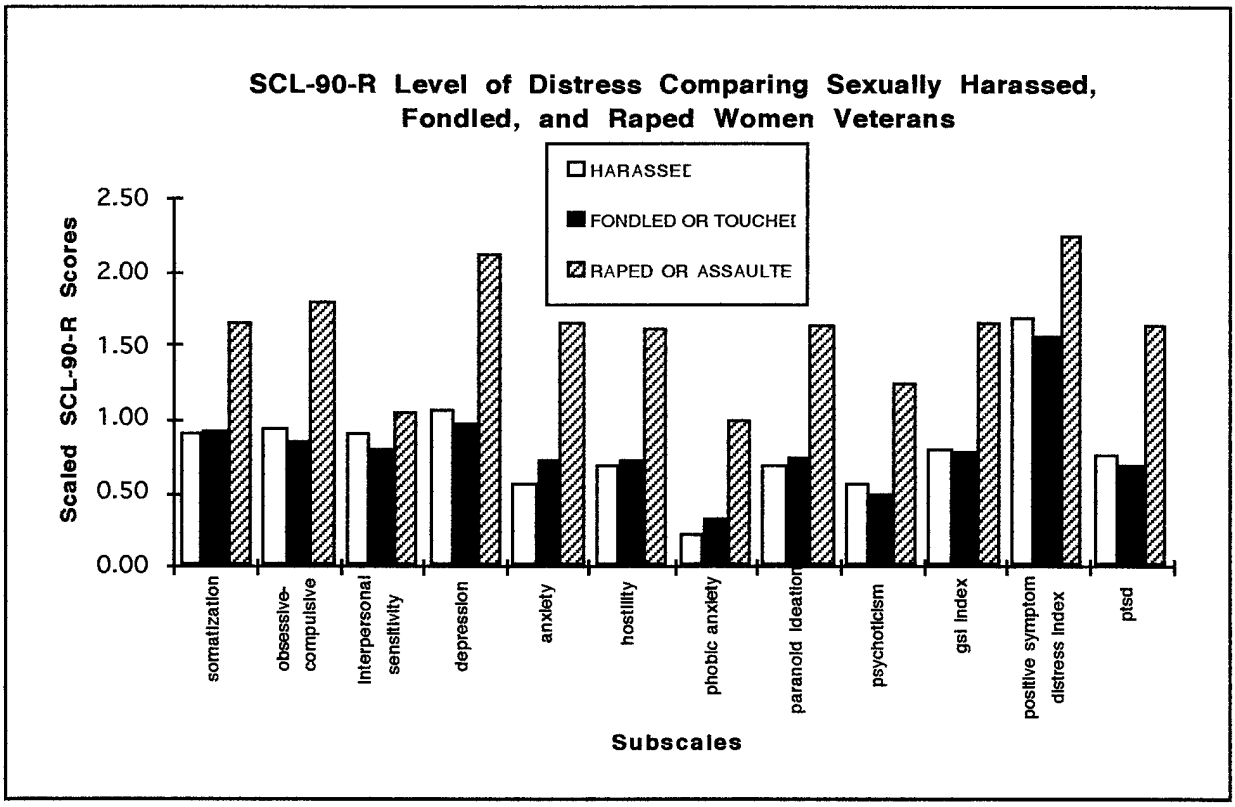


Figure 2



Demographic Indicators of Distress: The degree of emotional distress in sexually victimized women veterans is further reflected by the finding that 57 women (20%) responded that they would like to receive psychological counseling for sexual trauma. Twenty-seven percent (n=77) reported that they had received outpatient professional treatment in the past and 19% (n=56) had undergone inpatient hospitalization for emotional or substance abuse problems. Sixteen percent (n=47) had been prescribed medication for a psychological or emotional problem within the past six months.

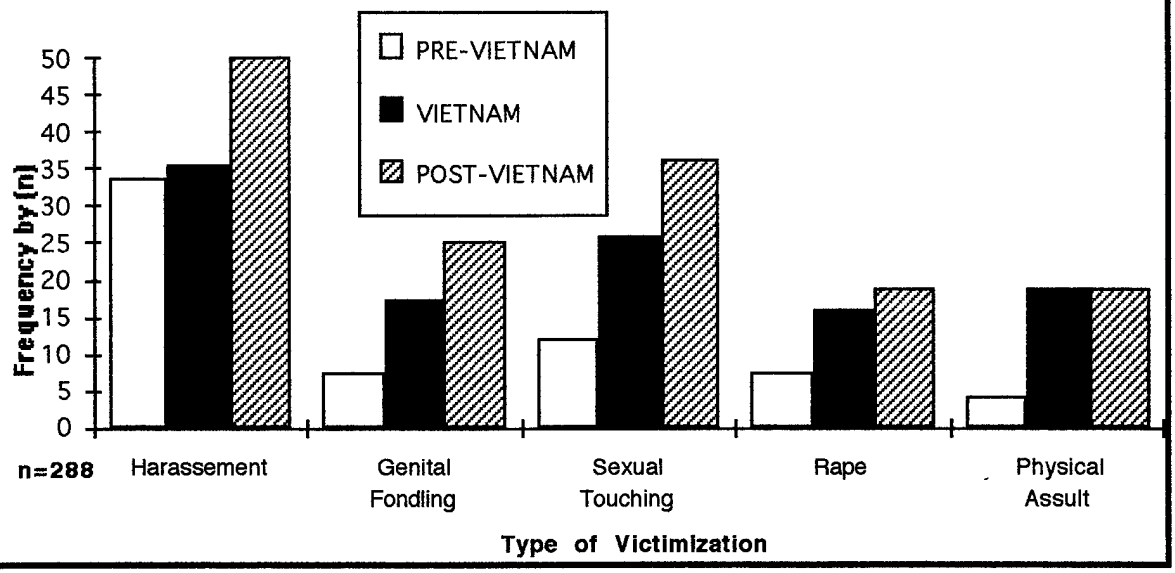
Military Response to Report of Rape: A total of 15 women reported their experience of rape to their commanding officer. Ten (24%) reported that their commanding officer responded by stating or implying the rape was the victims' fault. Nineteen percent (n=8) reported that they were told by their commanding officer to "forget about it" and "do not tell anyone else".

Sexual Victimization and Era of Service

Progressively, the military has provided expanded career options for women resulting in their integration into traditionally male roles. In identifying predictors of rape, era of service consistently accounted for a major proportion of the variability (Figures 1 and 2). Era of military service was found to be significantly associated with occurrence of sexual victimization (Figure 3). Recent service era women veterans reported progressively greater occurrences of sexual victimization with increases in sexual harassment and sexual touching being most notable. Frequencies of sexual touching ranged from 1 to 22 occurrence. Frequencies of genital fondling ranged from 1 to 15 occurrences.

Fig. 3:

Sexual Victimization of Women Veterans by Era of Military Service



(6). BODY

Methods. This study uses a historical cohort design. Veterans are notified of our study through a cover letter and information summary which is enclosed with a written consent form and pre-stamped, pre-addressed return envelope. We then follow up by telephone interview. Telephone interviewing is a cost-effective and reliable means of interviewing a large number of veterans located throughout the United States and compares favorably with face-to-face interviewing in terms of response rate, completeness, and validity of responses (U.S. Department of Health and Human Services, 1989). Computer-assisted telephone interviewing (CATI) will be used as an efficient means of recording data obtained in the telephone interviews. Using the CATI system, interviewers utilize video display computer terminals that are 'on-line' to a central processing unit.

Questions appear on the video screen in the proper order and skip patterns are followed automatically, depending on the respondent's answers. Answers are keyed in as numerical entries. All data from respondents are entered instantly in an automated file. Range and logic edits are built into the system so that interviewers can immediately correct inappropriate entries. This feature reduces substantially the number of callbacks to subjects that otherwise may be necessary. The system also permits the interviewer to return to previous questions to modify earlier entries when the respondent changes her mind or when the interviewer realize that a wrong number has been entered.

Inclusion Criteria for research participation includes: A) women veterans; B) service veterans from Air Force, Army, Navy, Marines, Coast Guard; C) military era of service to include Vietnam Era (beginning 8/5/64) to recent discharge. Subjects are randomly selected, using a table of random numbers, from registries of VAMC Comprehensive Health Centers for Women. Registry data consists of names, addresses, era of service, and occasionally phone numbers of women veterans who: 1) have obtained treatment at the local VAMC or Vet Center, 2) have sought or currently are receiving a service connected disability, 3) have attended local women veteran's conferences, or 4) have answered newspaper advertisements requesting registration for mailing lists.

Work Progress Statement. Funding Availability, Personnel, and Equipment: Due to two government shutdowns and VAMC personnel furloughs, funding was not available September 15, 1995 as anticipated. The research coordinator, Deanna Nielson, M.A., was hired between furloughs on February 4, 1996. Equipment and materials (such as computer and printer, software, testing materials) arrived April 22, 1996.

Registry Access: The following registries of VAMC Comprehensive Health Centers for Women allowed us access to their registries of women veterans: Boston, Chicago, Durham, Minneapolis, Tampa, and West Los Angeles. The Durham VAMC required us to go through their human subjects review board and did not provide registry access until September 1996. South-Eastern Pennsylvania (network hospitals) refused access to registry data with a rationale of disinterest in research. Follow-up interventions from our research ACOS, Steven Breese, were also unsuccessful. San Francisco human subjects review board requires that a local investigator be designated and we are currently communicating about the possibility that this requirement be waived for a national epidemiological study.

The total registry of Viet Nam, Post Viet Nam, and Desert Storm era women veterans that we have obtained contains 8,700 subjects (see Table 6).

Table 6: Number of Women Veterans in Registry by Site

Site	Number in registry
Boston	2340
Chicago	516
Durham	1240
Minneapolis	893
Tampa	1184
Los Angeles	2520

Stratification of Registry Data: We predicted that we needed to randomly select at least 2,500 women veterans from registry data to achieve our designated sample size of 550 subjects (22% response rate). After reviewing registry data it was noted that surprisingly the proportions of women veterans by era of service differed dramatically at each site. Consequently, our sample of 3,300 subjects was stratified both by site and by era of service with 275 veterans contacted in each mailing. Minneapolis and Chicago registries were combined to form the North Central Region and Durham and Tampa combined to form the South East Region for geographic stratification. Should the San Francisco registry be obtained, it will be combined with the West Los Angeles data to form the Western Region.

Table 7: Information and Consent Mailing Schedule

Mailing Date	Region	Era	Follow-up Letter
Aug. 30	Boston	Persian Gulf	Sep. 16
Sep. 6	North Central	Viet Nam	Sep. 23
Sep. 13	West Los Angeles	Post Viet Nam	Oct. 30
Nov. 6	Boston	Post Viet Nam	Nov. 20
Nov. 6	North Central	Persian Gulf	Nov. 20
Nov. 13	South East	Post Viet Nam	Nov. 27
Nov. 13	Boston	Viet Nam	Nov. 27
Nov. 20	North Central	Post Viet Nam	Dec. 4
Nov. 20	South East	Viet Nam	Dec. 4
Nov. 27	South East	Persian Gulf	Dec. 11
Nov. 27	West Los Angeles	Viet Nam	Dec. 11
Dec. 4	West Los Angeles	Persian Gulf	Dec. 18

Mailing Schedule: Initial mailing of information summary and consent materials have been sent to Boston, North Central region, and West Los Angeles respectively on the dates of August 30, September 6 and September 13, 1996. Follow-up letters have been mailed to Boston and North Central region on September 16 and 23, respectively, but have not yet been sent to the West Los Angeles site. Due to a lag in completion of interview programming by The University of Iowa Social Sciences Institute (SSI:the interview facility) and a rapid and robust response rate, mailings have been delayed until interviewing commences (see Table 7). It is anticipated that all telephone interviews and consequently data entry will be completed by January 30, 1997.

Response Rates: Letters including information summaries and consent forms have been sent to 825 women veterans (n=275 per site) to date. Initial mailing and a two week follow-up letter have been set to cohorts from Boston and North Central Regions (Minneapolis and Chicago). Only the initial mailing has been sent to West Los Angeles subjects thus far.

Two hundred and thirteen women veterans have returned written consent to participate in this research (See Table 8). Returned mail with no forwarding address has occurred for 162 subjects and two veterans were deceased. Six women veterans have written or called to refuse participation. Three male veterans notified us that they had been inappropriately identified as women veterans.

Table 8. Response Rates by Site (total n=825)

Site	Era	Number Consenting	Invalid Address	Response Rate
Boston	Persian Gulf	68	46	30.0%
North-Central	Viet Nam	115	16	44.7%
West Los Angeles	Post Viet Nam	30	100	17.2%
TOTALS		213	162	32.3%

Availability of Investigators to Subjects: Telephone numbers of the principal investigator and the research coordinator, as well as the SSI toll free number, have been made available to contacted veterans. Telephone contacts have been logged to identify questions and trends in comments made by callers.

Those veterans who have consented to participate in this study have been sent letters personally signed by the principal investigator and study coordinator informing them of the anticipated interview schedule. Subjects have designated on an information sheet the most appropriate telephone number and time for the interview to take place in order to expedite convenient and timely interviews.

Computer-Assisted Telephone Interviewing (CATI): The University of Iowa Social Sciences Institute (SSI), Iowa City, Iowa has programmed the study interview. Co-investigator

Brenda Booth, Ph.D. made available consultants that she employs for another national CATI study to review the programmed interview. As a result, we were able to have external validation of SSI programming of this telephone interview. Consultants Dr. James Torner and Dr. Brad Doebbling have also provided expert opinions on the content and structuring of the interview.

Interviewers have been trained by the principal investigator, co-investigator Brian Cook, D.O., and research coordinator Deanna Nielson, M.A. in two sessions on September 17, 1996 and September 26, 1996. Interviewers were instructed in how to use our structured interview and to deal effectively with participants. They were educated in ways to respond to any emotional demands the veterans might place on them and in how to refer veterans to appropriate local VAMCs, women veteran coordinators, or Vet Centers for education or treatment.

Interviewers are now gaining familiarity with performing the interview and will be doing proxy interviews the weeks of October 7 through October 18, 1996. Actual interviews will begin no later than the week of October 21. The Iowa Social Sciences Institute projects that they will be able to complete 40 to 50 interviews each week. Interview and data entry is targeted to be completed by January 30, 1997.

(7). CONCLUSIONS

Despite unforeseen circumstances, such as government shutdowns, the time line projected for the first year of this study has been maintained. Our response rate to date has exceeded our expectations.

In year two interviews and data entry will be completed, statistical analysis of data will be performed, and findings will be prepared for presentation at national meetings and publication.

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